



# **YAMAHA**

# **EC4000DV EC5000DV(E)**

## **Portable Generator OWNER'S MANUAL**

LIT-19626-00-10

7EL-28199-10

## FOREWORD

We thank you for the confidence you have shown in us by purchasing Yamaha's new portable generator. This manual contains the information required for safe operation, proper handling and daily care of your machine. A thorough knowledge of these instructions will help you to keep your machine in a state of maximum performance. If you have any trouble with your generator, you should consult your dealer for assistance.

**EC4000DV, EC5000DV(E)**

**OWNER'S MANUAL**

**©1985 by Yamaha Motor  
Corporation, U.S.A.**

**1st edition, January 1985**

**All rights reserved. Any reprinting or  
unauthorized use without the written  
permission of Yamaha Motor  
Corporation, U.S.A. is  
expressly prohibited.**

**P/N LIT-19626-00-10**

## IMPORTANT

**PLEASE READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE OPERATING THIS GENERATOR.**

Particularly important information is distinguished in this manual by the following notations:

### **NOTE:**

A NOTE provides key information to make procedures easier or clearer.

### **CAUTION:**

A CAUTION indicates special procedures that must be followed to avoid damage to the generator.

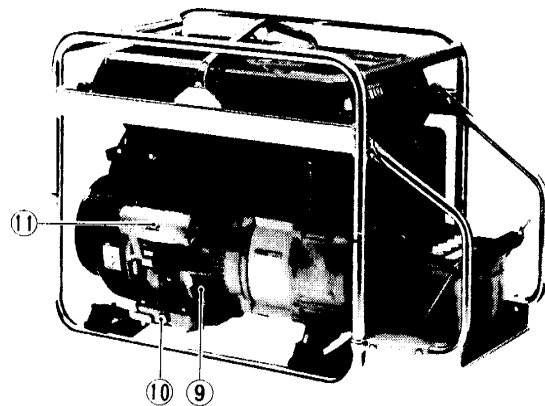
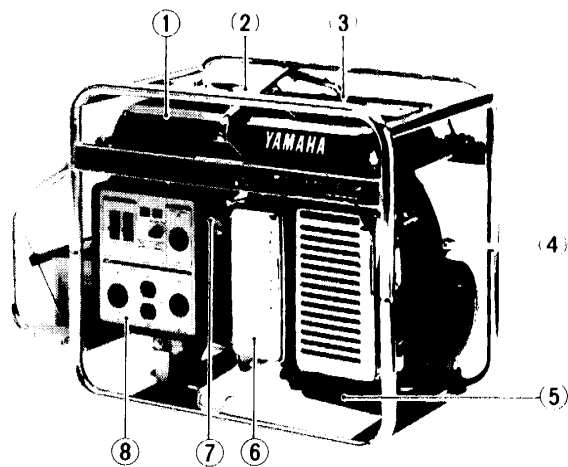
### **WARNING:**

A WARNING indicates special procedures that must be followed to avoid injury to a generator operator or person inspecting or repairing the machine.

## CONTENTS

|  |    |
|--|----|
| 1. NOMENCLATURE .....                                | 1  |
| 2. GENERATOR IDENTIFICATION .....                    | 4  |
| 3. WARNINGS AND CAUTIONS<br>FOR SAFE OPERATION ..... | 5  |
| 4. OPERATIONAL NOTES .....                           | 8  |
| 5. PRE-OPERATION CHECKS .....                        | 12 |
| 6. OPERATION .....                                   | 16 |
| 7. MAINTENANCE .....                                 | 23 |
| 8. LONG TERM STORAGE .....                           | 29 |
| 9. TROUBLESHOOTING .....                             | 32 |
| 10. SPECIFICATIONS .....                             | 35 |
| 11. ENGINE HANGER INSTALLATION .....                 | 37 |
| 12. BATTERY TRAY INSTALLATION .....                  | 38 |
| 13. OPTIONAL PARTS INSTALLATION .....                | 39 |

## NOMENCLATURE



① Fuel tank

⑤ Muffler

⑨ Oil filler cap

② Fuel tank cap

⑥ Air cleaner

⑩ Oil drain plug

③ Spark plug blind cap

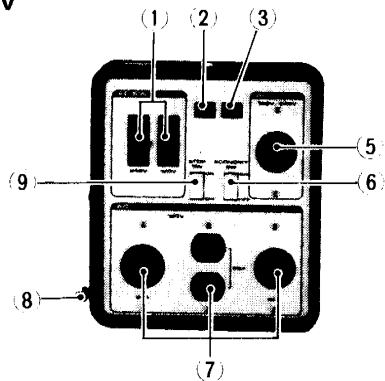
⑦ Fuel cock

⑪ Starter motor (only "E" model)

④ Recoil starter

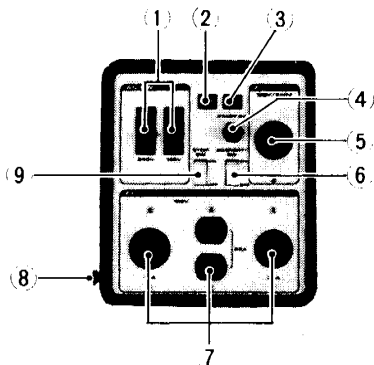
⑧ Control box

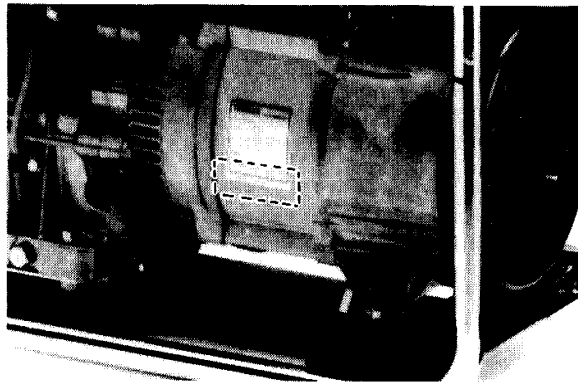
**EC4000DV  
EC5000DV**



- ① AC switch (NFB)
- ② Oil warning lamp
- ③ Pilot lamp
- ④ Starter switch
- ⑤ AC receptacle (120V/240V)
- ⑥ Economy idle switch
- ⑦ AC receptacle (120V)
- ⑧ Ground terminal
- ⑨ Engine stop switch

**EC5000DVE**





## GENERATOR IDENTIFICATION

The generator set serial No. is stamped on the position shown in the photo.

The first three digits of these numbers are for model identification; The remaining digits are the unit production number.

Refer always to this number when ordering parts from a Yamaha dealer.

## WARNINGS AND CAUTIONS FOR SAFE OPERATION

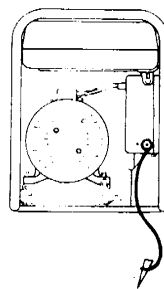
For safety operation, observe the following instructions:

1. Exhaust gases contain harmful carbon monoxide. Never operate the engine in a closed place. Operate the generator in a spacious, well-ventilated place.
2. Avoid placing any inflammables near the exhaust outlet during operation.
3. Do not operate the generator with a dust cover.
4. When refilling the fuel tank, be sure to stop the engine and take care not to spill gasoline.
5. Wipe off any spilt gasoline quickly, or it could catch fire, thus causing an explosion.
6. Avoid operating the engine in rain or snow.

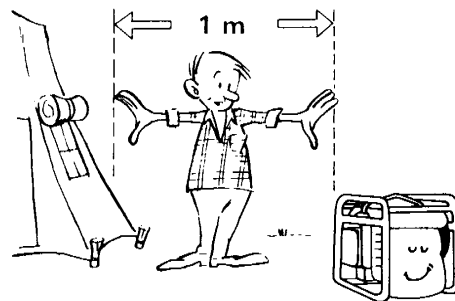
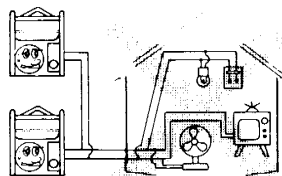
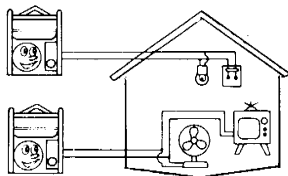
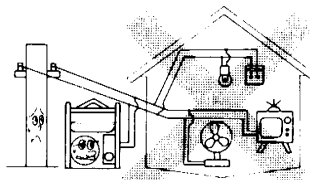
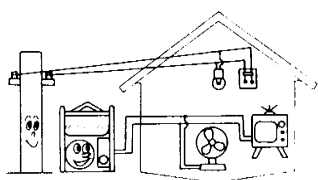


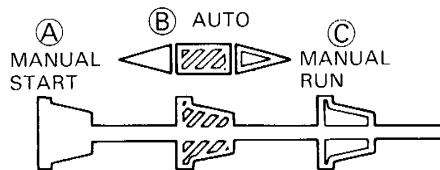


7. When starting manual start units, be sure that no one is in a position to be hit by the operator's hand, arm or the rope.
8. Never move or tilt the generator during operation. Operate the generator on a level.
9. Never allow a child to operate the engine.
10. Never touch the generator with a wet hand.
11. Be sure to ground the generator.



12. Do not connect the generator to your local power supply outlet.
13. Avoid operating the generator by connecting it in parallel with any other generator.
14. During use, keep the generator at least 1 m (3 ft.) from building or other equipment. When a generator is located close to a building or nearby equipment, heat and exhaust from the engine will cause the surrounding temperature to rise. This will lessen the engine's cooling effect and may cause overheating.
15. Make sure the hanger securing bolt is tightened securely, before hanging the generator to move it.
16. Do not open the oil filler cap during operation.
17. Always be sure that the generator is on secure footing and cannot shift around and injure someone.

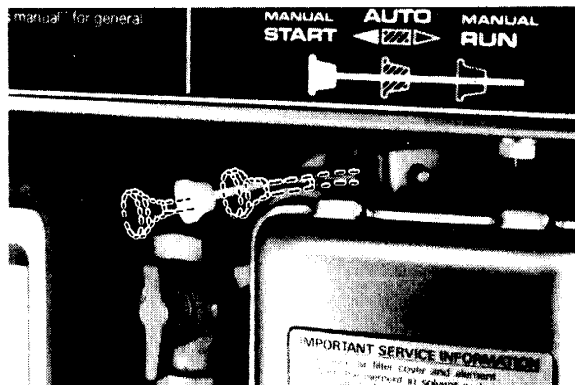


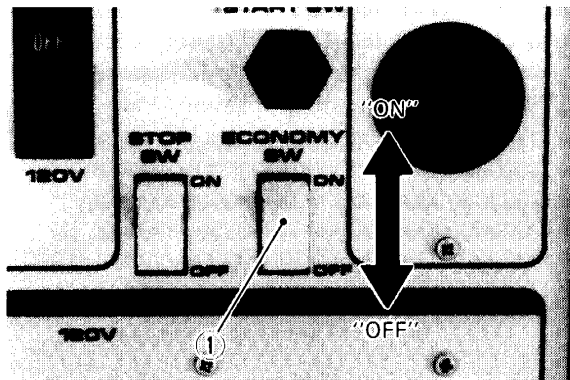


## OPERATIONAL NOTES

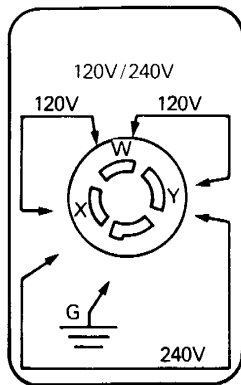
### Auto choke-EC5000DVE

- Ⓐ Used to close the choke valve manually.
- Ⓑ Auto-choke operating position  
The choke valve is automatically opened and closed.
- Ⓒ Used to open the choke valve manually.





① Economy idle switch



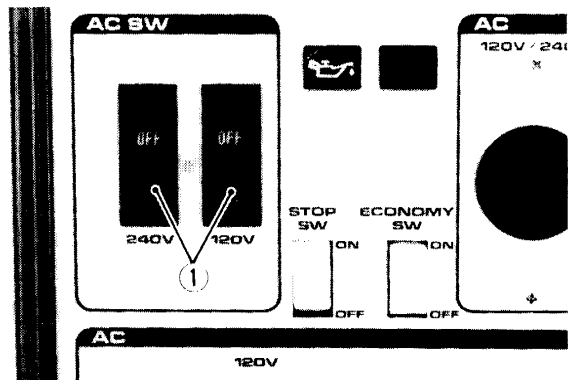
## Economy idle switch

|     |   |
|-----|---|
| OFF | The economy idle switch will not operate in this position. The engine runs at the rated speed, regardless of the engine load. With the switch in this position, the engine can be started under low temperature.                  |
| ON  | The economy idle switch operates. When an electrical load is used, the switch will not operate. Under no load, the switch automatically operates to reduce the engine speed. The results are better fuel economy and lower noise. |

### NOTE:

Move the ECONOMY IDLE SWITCH to the OFF position in case as follows;

1. Using a load of 0.8A or less.
2. Supplying AC 120V only by connecting W with X (see left.).



① NFB (No Fuse Breaker)

### NFB (No Fuse Breaker) for AC.

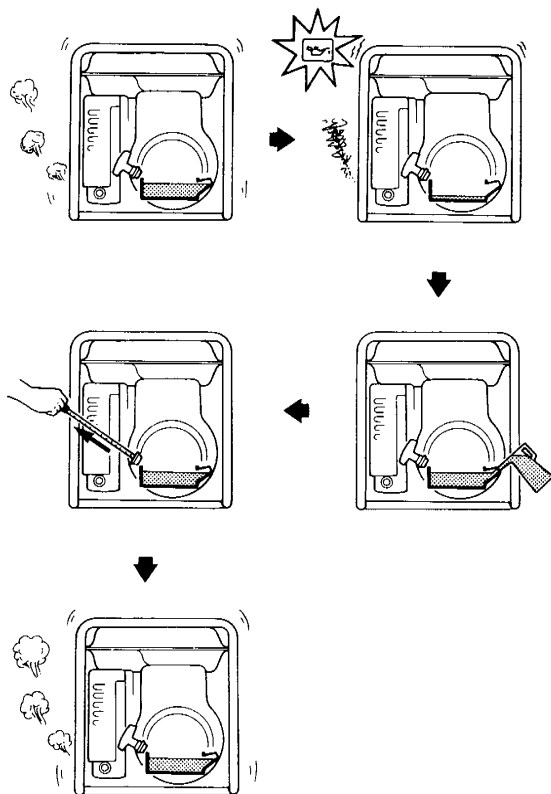
The AC switch turns off automatically when the load exceeds the rated generator output.

#### CAUTION:

Should the AC switch have turned off, the load on the generator is considered to be excessive. Reduce the load and turn on the AC switch. If it turns off again, consult your nearest Yamaha dealer.

#### CAUTION:

When starting the engine, be sure to turn OFF the AC switch on the generator and the appliance. Otherwise, hard starting or unstable power generation may occur, which could lead to damage to the appliance.

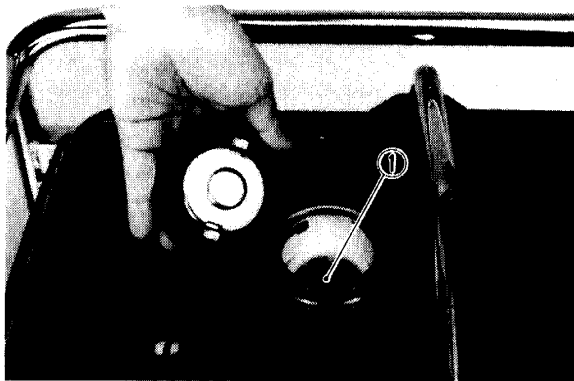


### Oil warning system

When the oil level goes below the lower level, oil warning lamp lights and the engine stops automatically. Unless you refill with oil, the engine will not start again.

#### **CAUTION:**

Should the engine stall abruptly, pull the starter handle and if the oil warning lamp lights, the engine oil is insufficient. Add oil and start operation.



① Red Mark

## PRE-OPERATION CHECKS

### Fuel

Fill the fuel tank with unleaded gasoline.

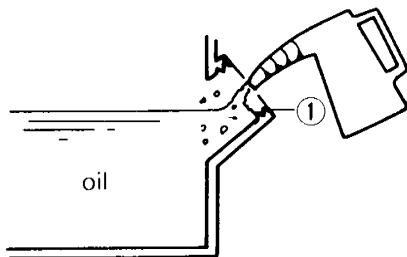
Fuel tank capacity:

at FULL TANK: 18.5 lit (4.9 US gal)

at RED MARK: 13.0 lit (3.4 US gal)

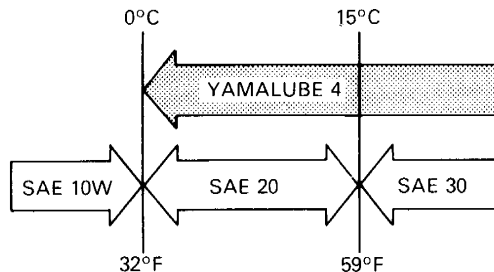
### CAUTION:

- If the fuel level exceeds the red mark, fuel may overflow when the generator is inclined or transported, thus causing a danger of fire.
- Avoid overfilling the gas tank.
- After filling, replace the tank filler cap and screw it in until tight.
- For refilling, select a well-ventilated place.



① Upper level

Recommended oil: 4-stroke engine oil  
API Service Classification SE or SF, if not available, SD



## Engine oil

Remove the oil filler cap and fill the engine oil until the oil begins to overflow the oil filler.

Engine oil capacity: 1,200 cc (1.27 US qt)

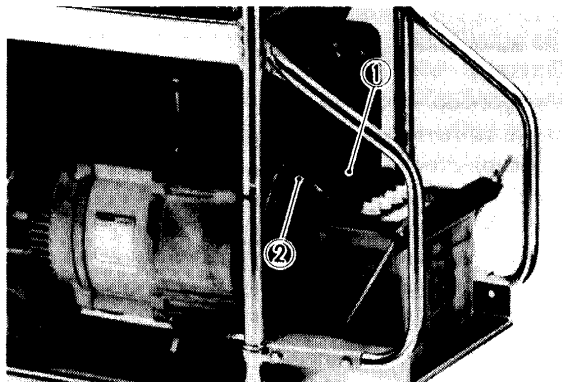
### CAUTION:

This engine is not filled with oil at the factory, so be sure to fill it before operating the engine, or the engine will be seriously damaged.

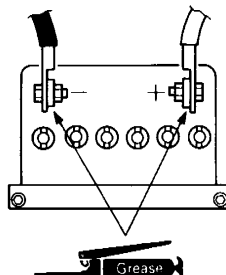
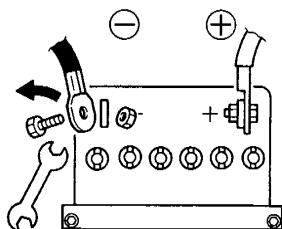
### NOTE:

Be sure the engine is level when checking the oil.





- ① Positive wire
- ② Negative wire



## Battery

- The EC5000DVE should use a battery of 12V/24AH capacity or more. (Cold cranking performance should be at least 200A. Reserve capacity should be at least 34 minutes.)
- Firmly secure the battery to the battery tray.
- First connect the positive wire ① to positive (+) terminal and then connect the negative wire ② to negative (-) terminal.

### CAUTION:

Do not reverse polarity of the battery wires. This will cause charging system damages.

- Apply grease to the battery terminals sparingly to protect against corrosion.

### CAUTION:

- Never attempt to disconnect battery wires during operation.
- Avoid operating the generator with the battery removed.

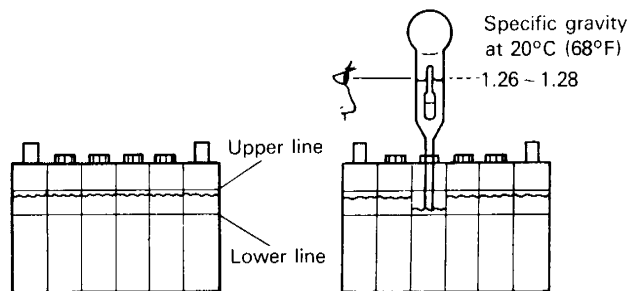
### Electrolyte (Battery fluid)

The fluid level should be between the upper and lower lines. Top up with distilled water, if necessary.

Specific gravity of the fluid should be between 1.26 and 1.28 at 20°C (68°F).

#### CAUTION:

Should battery fluid get on your skin or clothes, wash it away with water immediately.



#### WARNING:

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. Contains sulfuric acid. Avoid contact with skin, eyes or clothing.

Antidote:

**EXTERNAL**-Flush with water.

**INTERNAL**-Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately.

**Eyes:** Flush with water for 15 minutes and get prompt medical attention. Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in closed space. Always shield eyes when working near batteries. **KEEP OUT OF REACH OF CHILDREN.**

## OPERATION

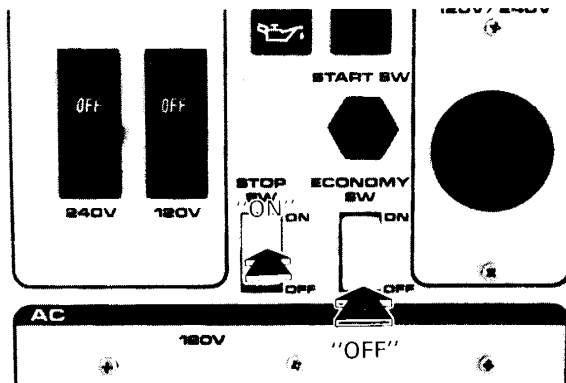
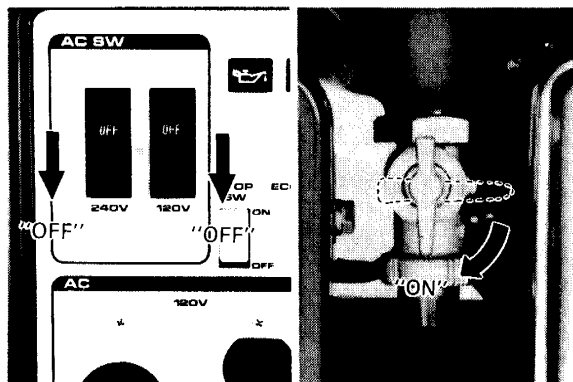
### Starting

#### NOTE:

Turn both AC switches to "OFF" to be sure there is no load on the generator during starting.

1. Set the fuel cock lever to the "ON" position.

2. Set the economy idle switch to the "OFF" position and engine stop switch to the "ON" position.



### 3. Manual starting

- a. Set the choke knob to the "START" position.

**NOTE:**

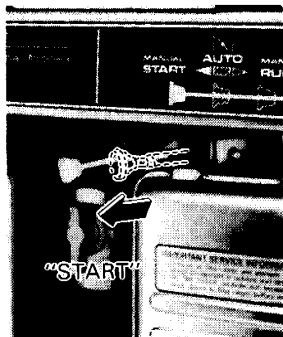
When engine is warm, set the choke knob to the "RUN" position.

- b. When the engine is ready for starting, slowly pull the starter handle. When engagement of the mechanism is felt, finish the stroke with a strong pull. After the engine has started, allow the starter handle to slowly return to its home position without letting go.

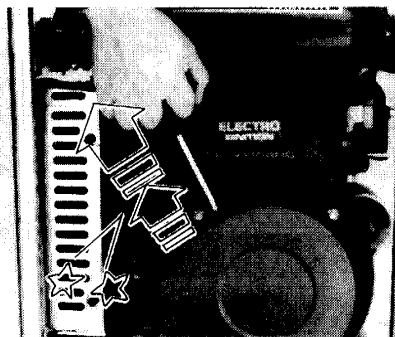
EC4000DV/5000DV



EC5000DVE



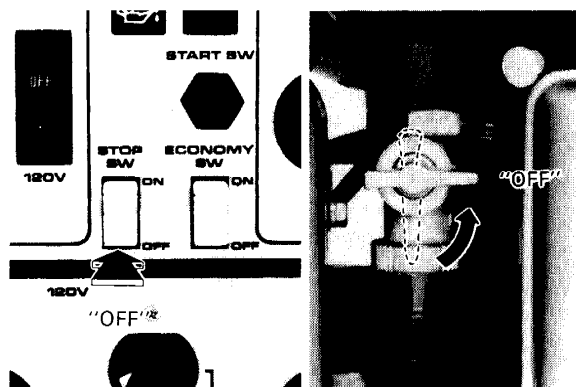
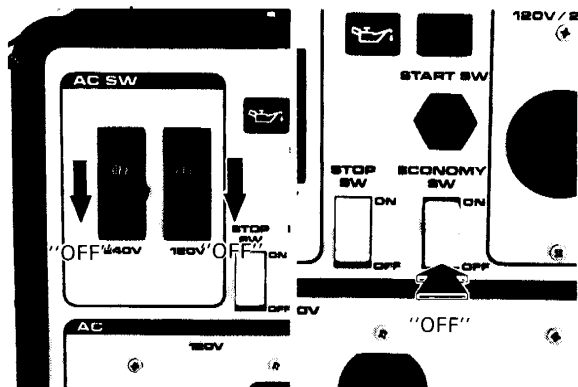
EC4000DV/5000DV





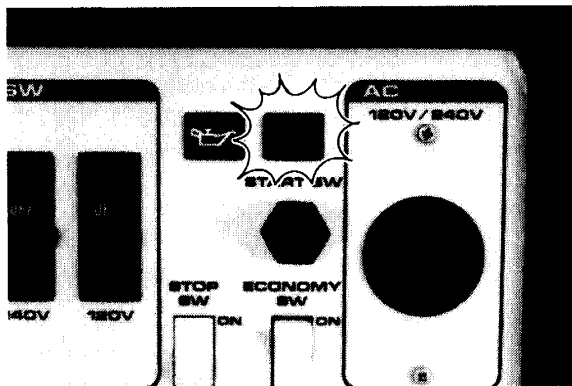
## Stopping the engine

1. Set both AC switches to the "OFF" position.
2. Set the economy idle switch to the "OFF" position.
3. Set the engine stop switch to the "OFF" position.
4. Set the fuel cock lever to the "OFF" position.

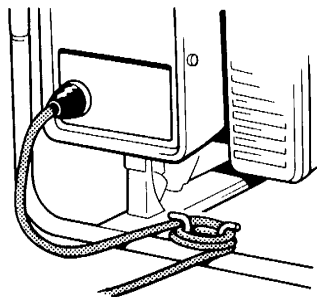


## Connections

1. Check that the pilot lamp is turned on.



2. Wind the electric apparatus power cord 2 or 3 turns around the cord holder and plug the cord into a wall receptacle.

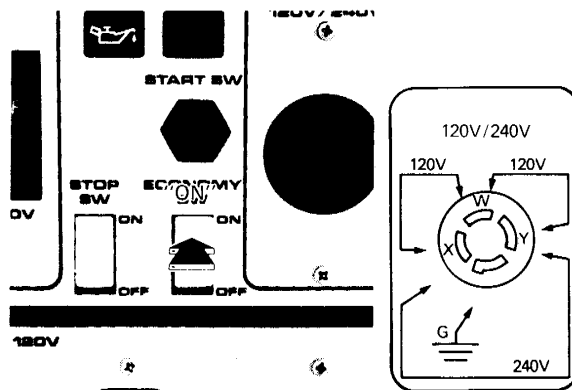


3. Turn the economy idle switch to "ON".

### NOTE:

Move the ECONOMY IDLE SWITCH to the OFF position in case as follows;

1. Using a load of 0.8A or less.
2. Supplying AC 120V only by connecting W with X (see left).



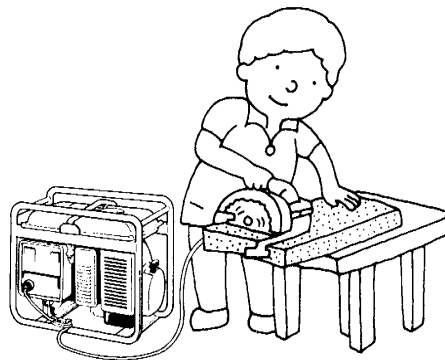
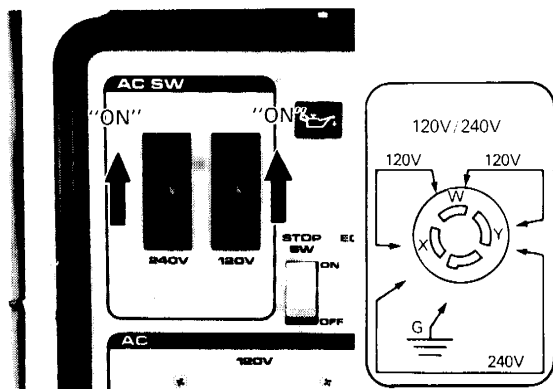
4. Turn the AC switch to "ON" to send current to the load.

**NOTE:**

1. In case of using the 4-blade socket, turn on both AC switches (NFB).
2. AC 120V output provided only from the blade W and blade X of the 4-blades socket is limited to about half of the rated 120V output.

**CAUTION:**

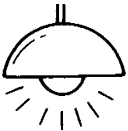

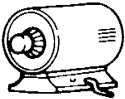
Do not exceed the current limit specified for any one receptacle.





### Application range

You can safely operate EC4000DV/5000DV(E) in the following range.

| Apparatus |   | EC4000DV | EC5000DV(E) | Remark                       |
|-----------|---|----------|-------------|------------------------------|
| AC        |  | ~3,600W  | ~4,300W     | Power factor<br>= 1          |
|           |  | ~2,880W  | ~3,440W     | Power factor<br>= 0.8 ~ 0.95 |
|           |  | ~2,070W  | ~2,470W     | Power factor<br>= 0.4 ~ 0.75 |

#### CAUTION:

If the generator is operated at output levels in excess of the rated output for extended periods, the generator windings may be damaged.

## MAINTENANCE

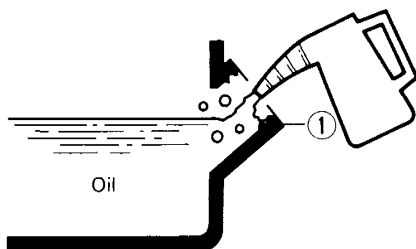
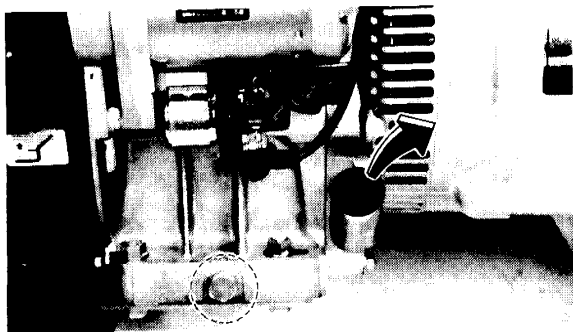
Regular maintenance is most important for the best performance and safe operation.

(1) --- When used in dusty area, should be serviced more frequently.

(2) --- Contact your authorized YAMAHA dealer to obtain standard service.

| Portion        | Check item   | Pre operation check (daily) | First month or first 20HR | Every 3-month or every 50HR | Every 6-month or every 100HR | Every year or every 300HR | Remarks   |
|----------------|--|-----------------------------|---------------------------|-----------------------------|------------------------------|---------------------------|---|
| Control system | Control lever (fuel cock, choke), switches operation | ●                           |                           |                             |                              |                           |   |
|                | Recoil starter operation                             | ●                           |                           |                             |                              |                           |   |
| Engine         | Engine condition, (starting, operation, noise).      | ●                           |                           |                             |                              |                           |   |
|                | Exhaust gases (leakage/color)                        | ●                           |                           |                             |                              |                           |   |
|                | Air filter element                                   | Inspection                  | Every 20HRS ●             |                             |                              |                           |   |
|                |  | Clean                       |                           | ● (1)                       |                              |                           |   |
|                | Looseness of screws, bolts and nuts                  | ●                           |                           |                             |                              |                           |   |
|                | Engine oil   | Inspection                  | ●                         |                             |                              |                           |   |
|                |  | Replace                     | ●                         |                             | ●                            |                           |   |
|                | Valve clearance                                      |                             |                           |                             |                              | ● (2)                     | Adjust if necessary                             |
|                | Decarbonizing  |                             |                           |                             |                              | ● (2)                     | Should be serviced more frequently if necessary |

| Portion           | Check item                           |            | Pre operation check (daily) | First month or first 20HR | Every 3-month or every 50HR | Every 6-month or every 100HR | Every year or every 300HR | Remarks   |
|-------------------|--------------------------------------|------------|-----------------------------|---------------------------|-----------------------------|------------------------------|---------------------------|---|
| Fuel system       | Fuel level                           |            | ●                           |                           |                             |                              |                           |   |
|                   | Fuel leakage                         |            | ●                           |                           |                             |                              |                           |   |
|                   | Fuel filter cup                      | Inspection | ●                           |                           |                             |                              |                           |   |
|                   |                                      | Clean      |                             |                           |                             | ● (1)                        |                           |   |
|                   | Fuel tank strainer                   |            | ●                           |                           |                             |                              |                           | Clean if necessary                                  |
|                   | Fuel pipes breakage                  |            | ●                           |                           |                             |                              |                           | Replace if necessary                                |
| Electrical system | Clean spark plug electrode           |            |                             |                           |                             | ●                            |                           | Adjust spark gap or replace spark plug if necessary |
|                   | Battery fluid level                  |            | ●                           |                           |                             |                              |                           |   |
|                   | Specific gravity                     |            |                             |                           |                             |                              | ●                         |   |
|                   | Battery terminal                     |            | ●                           |                           |                             |                              |                           |   |
| Generator         | AC receptacle with socket connection |            | ●                           |                           |                             |                              |                           |   |
|                   | Pilot lamp                           |            | ●                           |                           |                             |                              |                           | Replace if necessary                                |



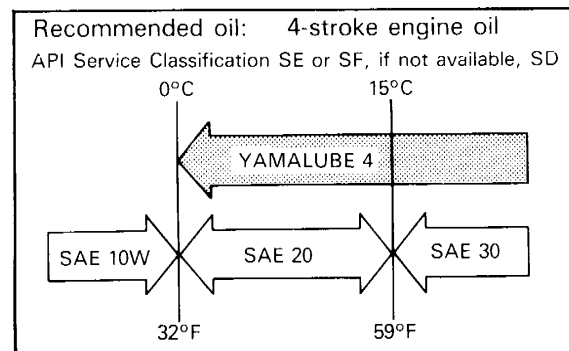
① Upper level

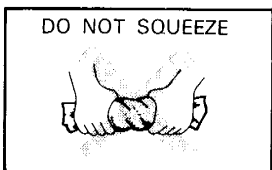
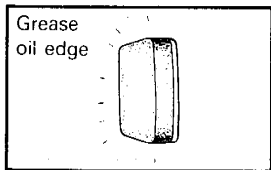
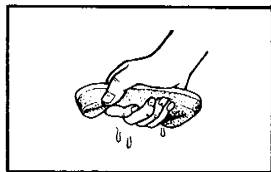
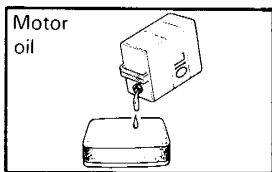
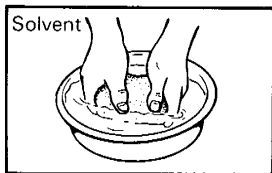
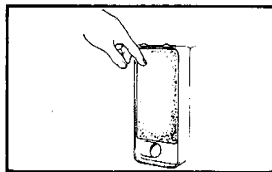
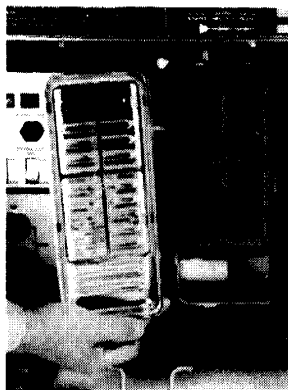
### Engine oil replacement

To replace the oil, first warm up the engine for 2 or 3 minutes, stop engine and remove the oil filler cap and oil drain plug so that the oil can be completely drained.

After draining the oil, install the oil drain plug, and fill oil until the oil begins to overflow the oil filler. Then reinstall the oil filler cap securely.

Engine oil capacity: 1,200 cc (1.27 US qt)





### Air filter element cleaning

Remove air filter cover and element.

Wash the element in solvent and dry.

OIL THE FILTER, squeeze out excess oil.

Apply grease to filter edges before installing.

#### NOTE:

After reinstalling the filter cover, tighten the wing nut securely to avoid the possibility of unfiltered air entering the engine.

#### WARNING:

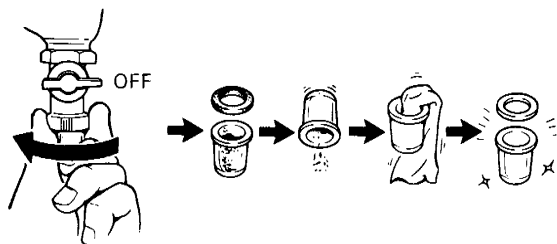
Do not smoke or allow open flames or sparks near any flammable solvent.

#### CAUTION:

Do not operate the engine with the air cleaner removed.

#### CAUTION:

Do not squeeze the element as illustrated, or the element could be broken.



### **Cleaning the fuel filter cup**

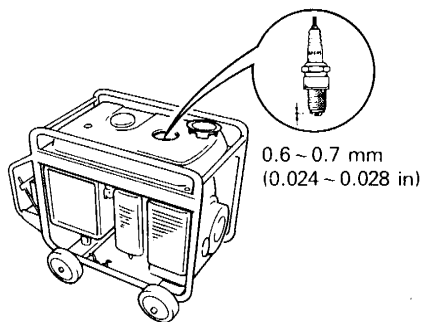
Set the fuel cock lever to the "OFF" position.  
Remove the filter cup and wash it in solvent.  
Wipe the filter cup clean and reinstall it.

#### **WARNING:**

**Do not smoke or allow open flames or sparks near any flammable solvent.**

#### **NOTE:**

Be careful so that the gasket is not lost. Without packing, fuel leakage may occur.



### Spark plug—Inspection and cleaning

- Remove the spark plug and remove the carbon from the electrodes.
- Check for discoloration.

**NOTE:**

Normally, the electrodes should show a tan color. If sooty or burnt white, consult your Yamaha dealer.

- Check the spark plug gap.

**NOTE:**

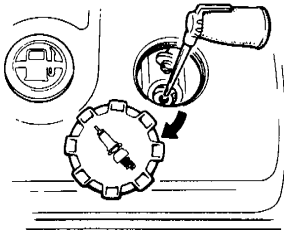
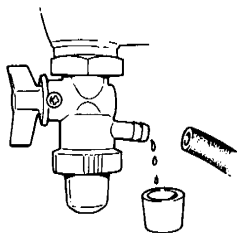
The correct spark plug gap is 0.6 ~ 0.7 mm. (0.024 ~ 0.028 in)

- The spark plug designation is:

BPR6HS (NGK)

or

RL-87Y (CHAMPION)



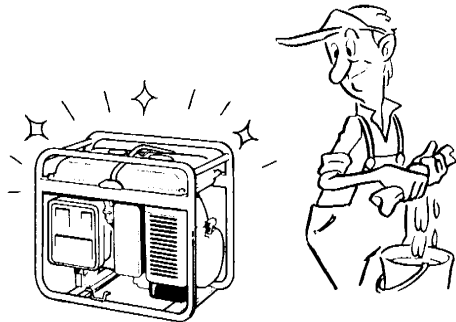
## LONG TERM STORAGE

When the generator is not used for a long period, it should be stored away.

Before storing, proceed as follows:

1. Drain the fuel tank completely.
2. Start the engine and keep the AC-SW in "OFF", then leave the engine until it stops by itself.
3. Remove the spark plug and put 3 to 5 cc of oil into the spark plug hole in the cylinder head. Install the spark plug and pull the starter rope a few times.
4. Retighten bolts and nuts.



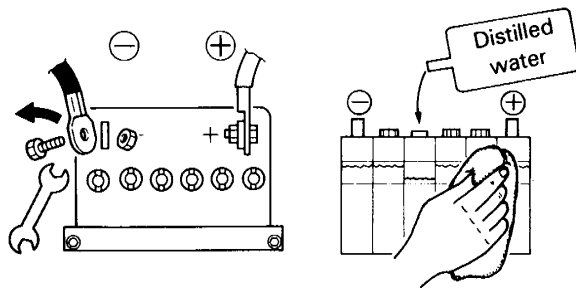


5. Clean exterior of the generator and apply a rust inhibitor.
6. Pull the starter rope, and when you feed resistance place the pulley with the red mark facing upward.  
(To prevent the cylinder and valves from rusting.)
7. Disconnect the negative and positive cable from the battery.

Top up with distilled water before storage. Clean up the battery exterior.

**CAUTION:**

Charge the battery once a month.





8. Store the generator in a dry, well-ventilated place, with a cover placed over it.

## TROUBLESHOOTING

L-010

### Engine won't start

#### 1. Fuel systems

No fuel supplied to combustion chamber.

- No fuel in tank . . . . . Supply fuel
- Clogged fuel line . . . . . Clean fuel line
- Foreign matter in fuel cock . . . Clean cock
- Clogged carburetor . . . . . Clean carburetor

#### 2. Electrical systems

Improper spark

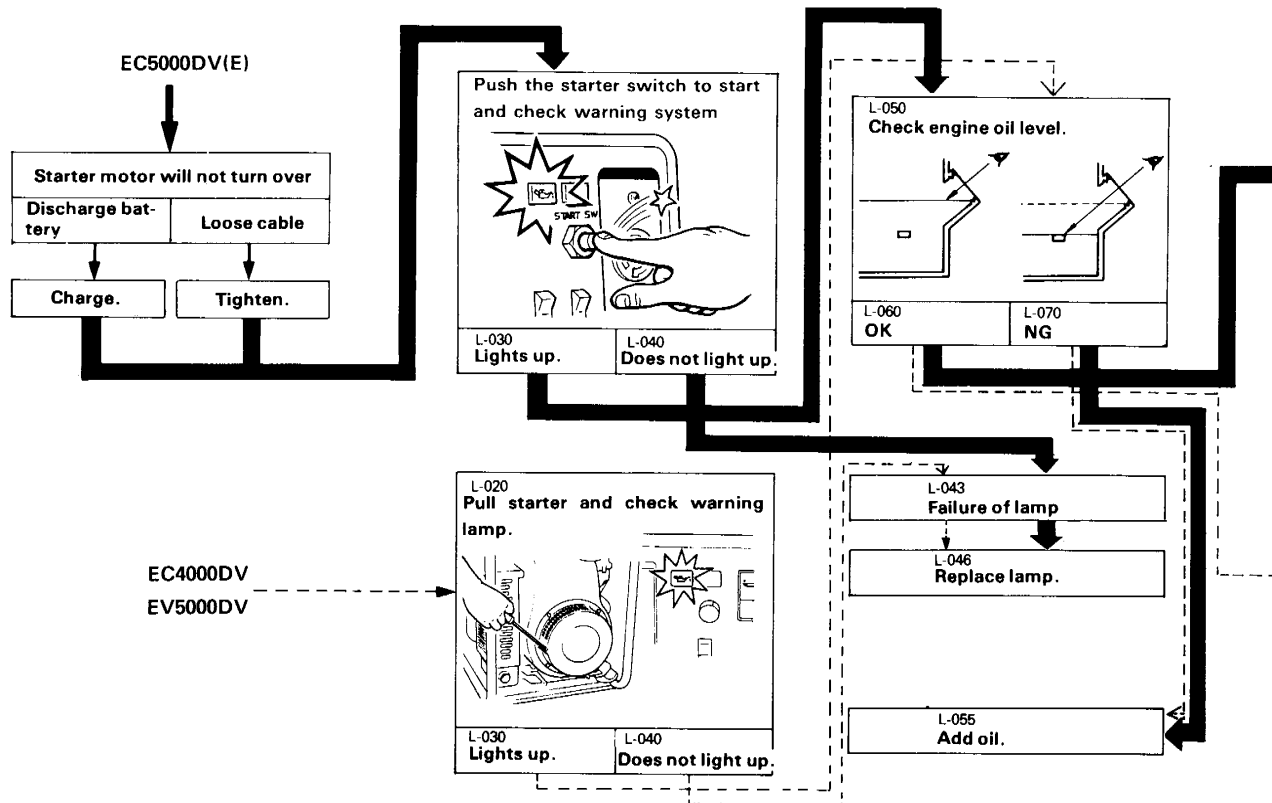
- Spark plug dirty . . . . . Remove carbon or  
with carbon or wet      wipe spark plug dry
- Faulty CDI system . . . . . Consult dealer

#### 3. Improper battery

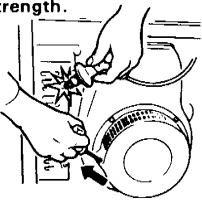
- Discharged battery . . . . . Charge
- Loose battery cable . . . . . Tighten

#### 4. Compression Insufficient

- Worn out piston, . . . . . Consult dealer  
and cylinder
- Loose cylinder . . . . . Tighten bolt(s)  
head nut(s)                      properly
- Damaged gasket . . . . . Replace gasket

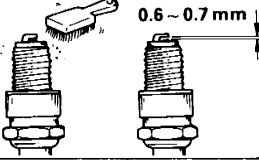


**L-080**  
Pull starter and check spark plug for spark strength.



|             |             |
|-------------|-------------|
| L-060<br>OK | L-070<br>NG |
|-------------|-------------|

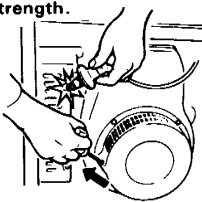
**L-110**  
Cleaning, Adjusting Spark Plug



|             |             |
|-------------|-------------|
| L-060<br>OK | L-070<br>NG |
|-------------|-------------|

**L-140**  
Consult your Yamaha dealer.

**L-080**  
Pull starter and check spark plug for spark strength.



|             |             |
|-------------|-------------|
| L-060<br>OK | L-070<br>NG |
|-------------|-------------|

**L-125**  
Check the following engine parts.

1. Fuel cock clogging
2. Air cleaner element clogging

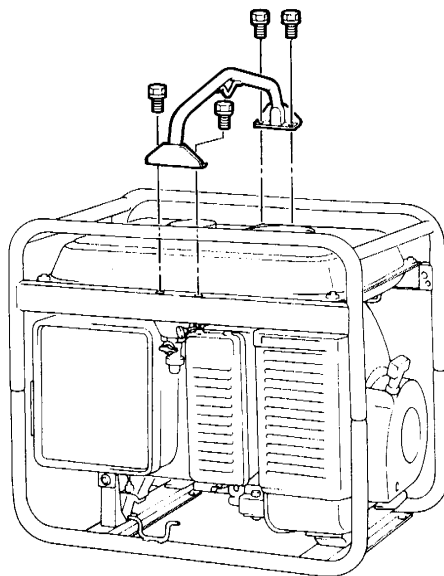
|             |             |
|-------------|-------------|
| L-060<br>OK | L-070<br>NG |
|-------------|-------------|

## SPECIFICATIONS

| Model<br>Item   | Unit         | EC4000DV                              | EC5000DV                              | EC5000DVE    |
|---|--------------|---------------------------------------|---------------------------------------|--------------|
| <b>DIMENSIONS</b>   |              |                                       |                                       |              |
| •Overall length   | mm (in)      | 665 (26.2)                            | 665 (26.2)                            | 855 (33.7)   |
| •Overall width  | mm (in)      | 425 (16.7)                            | 425 (16.7)                            | 430 (16.9)   |
| •Overall height   | mm (in)      | 601 (23.7)                            | ←                                     | ←            |
| •Weight   | kg (lb)      | 81 (178.6)                            | 83.5 (184.1)                          | 88.5 (195.1) |
| <b>ENGINE</b>   |              |                                       |                                       |              |
| •Type   |              | 4-stroke                              | ←                                     |              |
| •Number of cylinders  |              | 1                                     | ←                                     |              |
| •Total piston displacement                                      | cc (cc.in)   | 412 (25.1)                            | ←                                     |              |
| •Rated output   | PS/rpm       | 8.0/3,600                             | ←                                     |              |
| •Continuous operation hours at rated output without fuel refill | Hours        | at FULL TANK: 5.5<br>at RED MARK: 4.0 | at FULL TANK: 5.0<br>at RED MARK: 3.5 |              |
| •Fuel   |              | Unleaded gasoline                     | ←                                     |              |
| •Fuel tank capacity   | lit (US gal) | at FULL TANK: 18.5 (4.9)              | ←                                     |              |

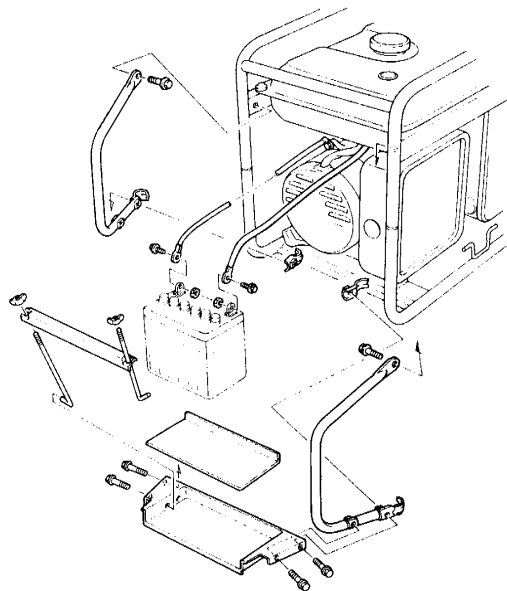
| Item \ Model                                       | Unit       | EC4000DV   | EC5000DV  | EC5000DVE |
|--|------------|--|-----------|-----------|
|  |            | at RED MARK:<br>13 (3.4)                                       | ←         |           |
| •Lubrication oil capacity                          | cc (US qt) | 1,200 (1.27)   | ←         |           |
| •Ignition system<br>•Cooling system<br>•Spark plug |            | C.D.I.<br>Forced air cooled<br>BPR6HS (NGK), RL-87Y (CHAMPION) |           |           |
| GENERATOR (AC output)                              |            |  |           |           |
| •Rated voltage                                     | V          | 115 / 230  | 115 / 230 |           |
| •Frequency   | Hz         | 60   | 60        |           |
| •Rated output                                      | W          | 3,600  | 4,300     |           |
| •Rated current                                     | A          | 31.3    15.7   | 37.4      | 18.7      |
| •Number of AC outlet                               |            | 4 / 1  | 4 / 1     |           |

## ENGINE HANGER INSTALLATION



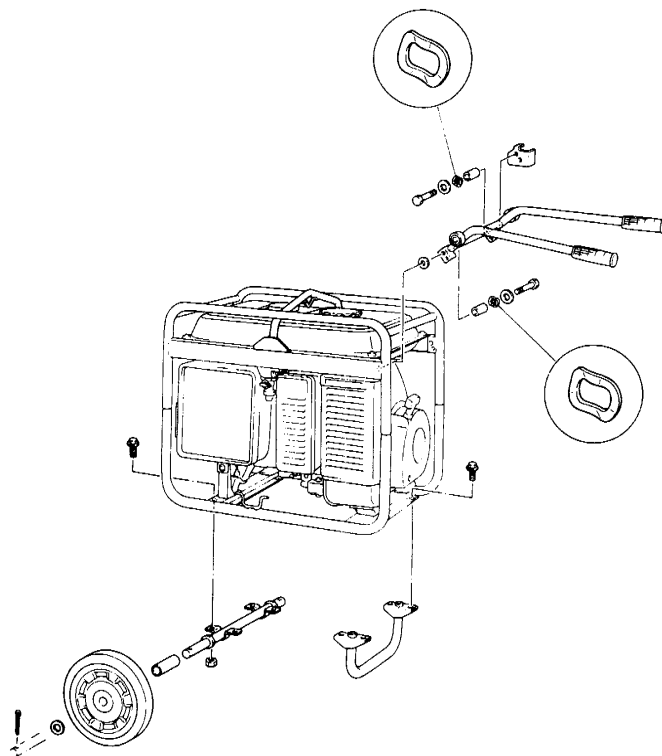


## BATTERY TRAY INSTALLATION (FOR EC5000DVE)



## OPTIONAL PARTS INSTALLATIONS

### 1) Two-wheel kit



## 2) Four-wheel kit

